

**REMARKS/DISCUSSION OF ISSUES**

By this Amendment, Applicant cancels claim 25 without disclaimer of the underlying subject matter or prejudice against future prosecution. Applicant also amends claims 18-24 and adds new claims 26-38. Accordingly, claims 18-24 and 26-38 are pending in the application.

The Examiner is respectfully requested to acknowledge the claim for priority and receipt of certified copies of all the priority documents.

The Examiner is also respectfully requested to state whether the drawings are acceptable.

Reexamination and reconsideration are respectfully requested in view of the following Remarks.

**35 U.S.C. § 112**

The Office Action rejects claims 18-25 under 35 U.S.C. § 112 on various grounds.

The Office Action states that the specification does not disclose means for distinguishing between bindings of different strengths.

As amended, claim 18 recites means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

As one non-limiting example, the specification discloses that such means may include a magnetic field generator (e.g., magnet 14 in FIG. 5). See, e.g., page 17, line 34 – page 18, line 9 and page 26, lines 1-26.

The Office Action states that the specification does not disclose means for exerting a fluid frictional force on the first or second particles as recited in claim 22.

Applicant respectfully disagrees.

As one non-limiting example, the specification discloses that such means may include a source 20, a pump 21, and flow zones 27-29 as illustrated in FIG. 6. See, e.g., page 31, line 13 – page 32, line 11.

The Office Action states that the specification does not disclose means for generating an excitation that forces a lateral movement of the particles with respect to the array as recited in claim 24.

Applicant respectfully disagrees.

As one non-limiting example, the specification discloses that such means may include a valve 3 source pump 13 as illustrated in FIG. 5. See, e.g., page 24, lines 5-11 and page 26, lines 1-7.

By this Amendment, Applicant cancels claim 25 without disclaimer of the underlying subject matter or prejudice against future prosecution.

Accordingly, Applicant respectfully submits that the rejection of claim 25 under 35 U.S.C. § 112 is moot.

Accordingly, Applicant respectfully requests that the rejections of claims 18-24 under 35 U.S.C. § 112 be withdrawn.

#### **35 U.S.C. § 101**

The Office Action rejects claim 25 under 35 U.S.C. § 101.

By this Amendment, Applicant cancels claim 25 without disclaimer of the underlying subject matter or prejudice against future prosecution.

Accordingly, Applicant respectfully submits that the rejection of claim 25 under 35 U.S.C. § 101 is moot.

#### **35 U.S.C. § 102**

The Office Action rejects claims 18-22 and 24 under 35 U.S.C. § 102 over Wilson U.S. patent 6,337,215 ("Wilson"), and claims 18-24 under 35 U.S.C. § 102 over Baselt et al., 13 *Biosensors and Bioelectronics*, pp. 731-739 (1998) ("Baselt").

Applicant respectfully traverses those rejections for at least the following reasons.

##### **Wilson**

##### **Claim 18**

Among other things, the tool of claim 18 includes means for acting on the first

and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

The Office Action does not cite anything in Wilson which discloses any means for acting on first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

Applicant respectfully submits that Wilson does not disclose any means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 18 is patentable over Wilson.

Claims 19-22 and 24

Claims 19-22 and 24 depend from claim 18 and are deemed patentable over Wilson for at least the reasons set forth above with respect to claim 18, and for various novel features recited therein. For example, claim 19 recites that the first particles are coupled to the first microbiological entities, and the second particles are coupled to the second microbiological entities which are bound to the first microbiological entities. Applicant respectfully submits that Wilson does not disclose or suggest this.

**Baselt**

Claim 18

Among other things, the tool of claim 18 includes means for acting on the first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths.

The Office Action states that “[s]ince *Baselt teaches that multi-analytes are detected or screened, there must be more than one types (sic) of magnetic particles.*”

Applicant respectfully submits that Baselt does not disclose any means for

acting on first and second particles to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities to distinguish between the bindings of different strengths. Applicant does not concede that Baselt actually discloses first and second particles, but even if it did, according to the Office Action the first and second particles would pertain to different analytes. In that case, Baselt does not disclose acting on first and second particles **to cause the first and second particles to exert a mechanical stress on bindings between the first and second microbiological entities** to distinguish between the bindings of different strengths.

Accordingly, for at least these reasons, Applicant respectfully submits that claim 18 is patentable over Baselt.

**Claims 19-24**

Claims 19-24 depend from claim 18 and are deemed patentable over Baselt for at least the reasons set forth above with respect to claim 18, and for various novel features recited therein. For example, claim 19 recites that the first particles are coupled to the first microbiological entities, and the second particles are coupled to the second microbiological entities which are bound to the first microbiological entities. Applicant respectfully submits that Baselt does not disclose or suggest this.

**NEW CLAIMS 26-38**

New claims 26-32 depend from claim 18 and are deemed patentable over the cited art for at least the reasons set forth above with respect to claim 18, and for the various novel features recited therein.

Among other things, new claims 33-36 each pertain to a system for distinguishing between specifically-bound first and second microbiological entities and nonspecifically-bound first and second microbiological entities, where the system comprises first magnetic particles coupled to the first microbiological entities, and second magnetic particles coupled to the second microbiological entities, wherein a magnitude of a magnetic moment of each of the first particles is greater than a magnitude of a magnetic moment of each of the second particles.

Applicant respectfully submits that the cited prior art references do not disclose any system that includes this combination of features.

Among other things, new claims 37-38 each pertain to a system that includes first magnetic particles coupled to the first microbiological entities and second magnetic particles not coupled to any microbiological entities, wherein a magnitude of a magnetic moment of each of the first particles is greater than a magnitude of a magnetic moment of each of the second particles, and a magnetic field generator providing a magnetic field that operates on the first and second magnetic particles to exert a mechanical stress on bindings between the first and second microbiological entities.


Applicant respectfully submits that the cited prior art references do not disclose any system that includes this combination of features.

### **CONCLUSION**

In view of the foregoing explanations, Applicant respectfully requests that the Examiner reconsider and reexamine the present application, allow claims 18-24 and 26-38 and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 283.0720 to discuss these matters.

Respectfully submitted,

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